A new species of *Sphenomorphus* (Squamata: Scincidae) from Mount Kaindi, Morobe Province, Papua New Guinea

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Abstract: *Sphenomorphus wau* sp. nov. is described from a single specimen from near Wau in Morobe Province, Papua New Guinea. The new species is a member of the *S. solomonis* species group, but its affinities within that group are unclear.

Key words: Reptilia, New Guinea, taxonomy, description.

Introduction

New Guinea has a diverse skink fauna, with 166 currently recognised described species, distributed over 19 genera. The most species-rich genus is *Sphenomorphus* Fitzinger, 1843, with 46 currently recognised species, over a quarter of all New Guinean skinks. However, the species diversity of *Sphenomorphus* is an underestimate, with many new species to be described, and a number of current synonyms to be resurrected.

Many of the New Guinea *Sphenomorphus* are short-limbed semifossorial or leaf litter inhabitants, constituting a single major lineage, the *Sphenomorphus solomonis* species group, characterised by the presence of a postsupraocular scale (Greer & Shea 2004). Most members of this group show a pattern of fragmentation of the temporal and posterior supralabial scalation that involves at a minimum the division of the last supralabial into an upper and a lower scale, with many species showing addition division of the penultimate supralabial, the primary temporal and/or the lower secondary temporal. One species, *S. schultzei* (Vogt, 1911a), falls outside this pattern in having division of the primary temporal into an upper and lower scale, without any division of the last two supralabials.

In this paper, we describe a second species of *Sphenomorphus* with this peculiar pattern.

The new species is known from only a single specimen from the upper slopes of Mt. Kaindi near Wau in Morobe Province, collected in 1973. While we would normally like to examine additional specimens to confirm the diagnostic characters prior to naming the species, the site is now inaccessible due to closure of the Wau Ecology Institute and landslides blocking the track to the site, and despite large numbers of *Sphenomorphus* specimens having been collected from this and nearby sites in the period 1961–1988, no additional specimens of the species have been found. It is readily distinguished from all other *Sphenomorphus* known from Morobe Province by multiple character states, and hence we are confident that the species is not just an aberrant individual of an already described species.

Material and methods

Definitions of head scales largely follow Taylor (1936), although we use the spelling supraciliaries rather than superciliaries, supralabials rather than upper labials, and infralabials rather than lower labials, in accordance with general usage.

In particular, we provide the following definitions of the scales around the orbit.

Supraciliaries are the small scales bordering the lateral margin of the supraocular scales. The first supraciliary contacts both the first supraocular and the prefrontal. The last supraciliary extends medially along the posterior border of the last supraocular, and overlaps the anterior margin of the parietal and the uppermost postsubocular. In the *Sphenomorphus solomonis* species group, the last supraciliary seems to have become enlarged, extending medially to reach the frontoparietals, and has become divided into an upper and lower scale, the lower overlapping the upper. The upper scale of the two has been termed the postsupraocular by Greer & Shea (2004), as it is aligned with the supraocular series, but partially separated from them by the lower element of the posterior most supraciliary, and lies with its long axis at about 90° to the last supraocular. Presuboculars are the series of angular scales contacting the supralabials, from the first scale posterior to the posterior loreal to the last scale contacting both the supralabial below the centre of the eye and the one anterior to that. Preoculars are the scales (usually singular) that lie dorsal to the first presubocular, posterior to the posterior loreal, and align with the anterior end of both the upper and lower palpebral rows. Some authors adopt a different nomenclature, referring to two preoculars, and including the first presubocular as the lower preocular, thereby reducing the number of presuboculars by one. Postsuboculars are the line of scales following the anterior edge of the underlying jugal bone, from the first scale contacting both the subocular supralabial and the penultimate supralabial, posterodorsally to the last scale reaching and overlapping the corner of the parietal. Some authors, such as Greer & Shea (2004) restrict the postsuboculars to that part of the series contacting the penultimate supralabial. The upper and lower postoculars are the scales wedged between the last supraciliary, the penultimate supraciliary, and the upper postsuboculars, and are aligned with the posterior extremity of the upper and lower palpebral rows respectively. The evolutionary history and homology of the upper postocular are complex. In many lygosomines, and in the non-attenuate scincines (Taylor's 1936 "*Eumeces*", now spread over several genera), the upper postocular is a clearly distinct scale partially wedging between the last two supraciliaries, with the penultimate supraciliary lying lateral to the last supraocular, and the last supraciliary lying posterior to the last supraocular. In some genera, such as *Eugongylus* Fitzinger, 1843, a basal member of the tribe Eugongylini, the upper postocular variably wedges further between the last two supraciliaries, often fully separating them, and becoming a de facto penultimate supraciliary as it pushes dorsally, though its lower part is still aligned with the upper palpebral row. In most species in the tribe Sphenomorphini Welch, 1982, the upper postocular continues to extend dorsally, such that it is indistinguishable from the supraciliary series, and, like the last supraciliary, extends medially along the posterior margin of the last supraocular. However, in some sphenomorphins, such as the *S. solomonis* species group, this enlarged scale seems to have divided into a larger upper scale and a lower scale aligned with the upper palpebral row, returning to the former configuration of a penultimate supraciliary dorsally and upper postocular ventrally. However, the new penultimate supraciliary, extending along the posterior margin of the last supraocular rather than being lateral to it, is derived from the upper postocular rather than being a true member of the supraciliary row. The space occupied by the penultimate supraciliary plus the upper postocular in the *S. solomonis* species group corresponds to the space occupied by the upper postocular in other sphenomorphins, and the space occupied by the postsupraocular plus last supraciliary, and their relationship to other scales in the *S. solomonis* group, is in agreement with the relationships of the last supraciliary of other sphenomorphins. As a further complexity, Greer (1983) began to use the new term pretemporals for the combination of the last supraciliary and uppermost postsubocular of Taylor (1936). In this paper, we maintain Taylor's nomenclature for these scales.

Museum collection abbreviations follow Sabaj (2016).

Results

Sphenomorphus wau sp. nov. (Figs 1–2)

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Holotype ♀: BPBM 14182, Mt. Kaindi, 1900m, 5km WNW Wau (7.337259°S 146.666090°E, AGD 66 datum), Morobe Province, Papua New Guinea, collected A. Allison, 11 May 1973 (field tag AA 140).

Derivatio nominis: Toponymic. The species name is a noun in apposition alluding to the type locality (both the nearest town and the location of the former Wau Ecology Institute), and suggestive of surprise, the first author's initial thought when he found the specimen among the unidentified *Sphenomorphus* material at the Bishop Museum.

Diagnosis: Identifiable as a member of the tribe Sphenomorphini by the medial pair of preanals being enlarged and laterally overlapping the adjacent preanals, upper secondary temporal separated from first pair of nuchals by an upper tertiary temporal, and with most of the supradigital scales divided (Greer 1974; 1979; 1990). Assigned to the *Sphenomorphus solomonis* species group of Greer and Shea (2004) by lacking a windowed lower eyelid, and possessing a postsupraocular scale. Differs from all other members of the *S. solomonis* species group in having the last two supralabials undivided, the primary temporal divided, and the first supralabial not fused to the nasal.

Description: Measurements: The mature female holotype (follicles moderate-sized, oviducts obliquely pleated) has snout-vent length (SVL) 61 mm; axilla-groin length, from posterior side of forelimb to anterior side of hindlimb, with limbs extended at right angles to the body wall, 33 mm (54.1% of SVL); tail regenerated, original portion 63.5 mm, with regenerated portion included, 72.5 mm; forelimb length, from tip of claw of longest digit to medial end of post-brachial crease, with limb extended at a right angle to body wall, 12.5 mm (20.5% of SVL); hindlimb length, from tip of longest digit to medial end of postfemoral crease, with limb extended at a right angle to body wall, 15.5 mm, but missing terminal end of fourth (longest) digit bilaterally; estimated complete hindlimb length (based on relative proportions of toes being similar to other *Sphenomorphus*) 17 mm (27.9% of SVL); head length, from tip of snout to anterior margin of ear, 11.7 mm (19.2% of SVL); head width at widest point of head 8.9 mm (76.1% of head length); head depth at deepest point over parietal table, and including lower jaw, 6.5 mm (55.6% of head length).

Coloration in preservative (Fig. 1): Dorsal ground colour yellow brown, head and most of body with a few sparse dark brown small flecks. Posterior part of body, beginning at about the anterior extent of adpressed hind limbs, densely flecked with dark brown, progressing on the tail dorsum to a dense but fine dark reticulum, leaving only small spots of the lighter ground colour visible. Laterally yellow brown with a grey tinge, face with the ground colour largely obscured by a fine dark brown reticulum; upper and lower lips with dark margins to the labial scales giving a coarsely barred pattern; body dorsolaterally with a coarse dark brown reticulum about two scale rows wide dorsolaterally, marking a demarcation between dorsal and lateral patterns, becoming a finer reticulum along the flanks. Tail pattern laterally like tail dorsum. Limbs above with a coarse dark brown reticulum, bolder on the hind limbs than on the front limbs. Venter yellow-brown, throat with dark brown streaks and spots, ceasing at the level of the front limbs to leave a largely immaculate body venter; just posterior to the vent, dark spotting and streaking begins to redevelop, rapidly becoming the major feature of most of the tail venter. Parietal and visceral peritoneum unpigmented.

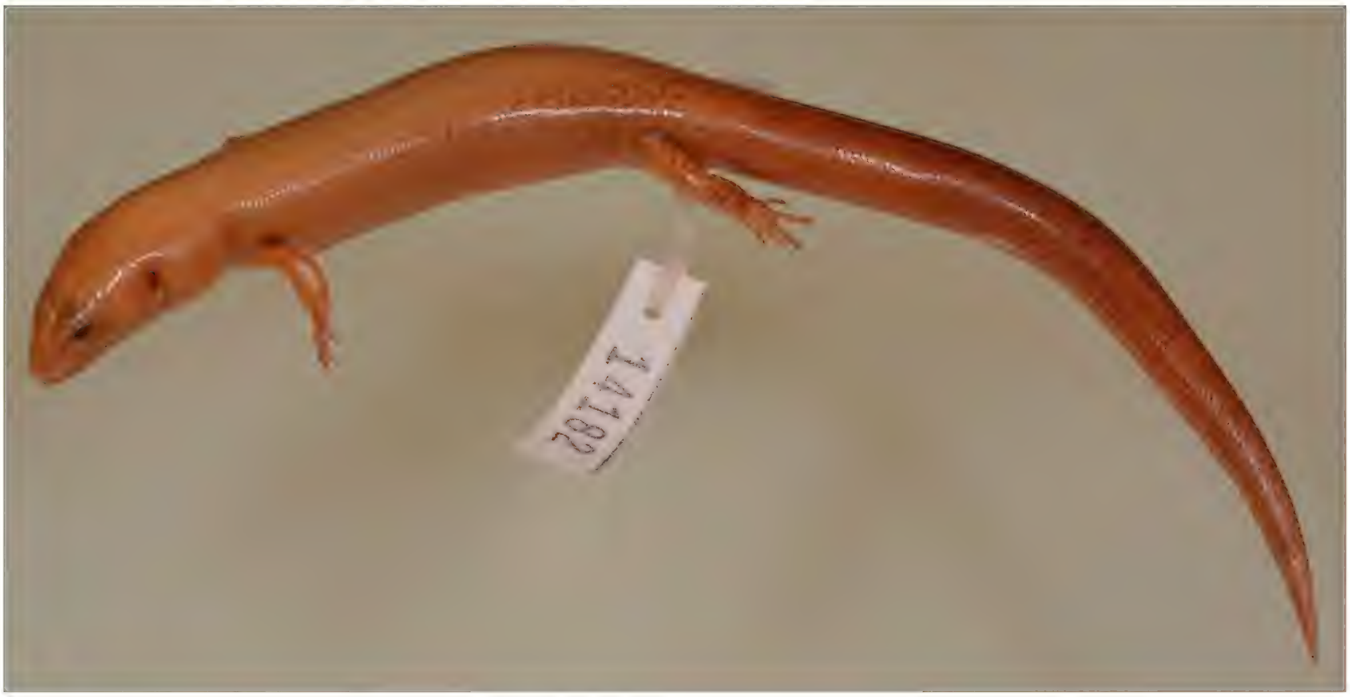

Figure 1. Holotype of *Sphenomorphus wau* sp. nov.

Scalation: Rostral with a moderate medial lobe extending posteriorly between nasals, and lateral lobes extending posteriorly to a point below the nostrils, in narrow contact with frontonasal. Frontonasal laterally overlapped by nasals and anterior loreal, posteriorly overlapping prefrontals; prefrontals large, in broad contact; frontal large, kite–shaped, laterally overlapped by first supraciliary, overlapping first two supraoculars; a pair of obliquely oriented frontoparietals, in moderate median contact, overlapped laterally by last three supraoculars and postsupraocular. Interparietal large, of similar size to frontal, overlapped by frontoparietals and overlapping parietals. Parietal eye spot absent. Parietals large, overlapped by postsupraocular, last supraciliary, and upper postsubocular, in median contact posterior to interparietal. Supraoculars four, of similar anteroposterior width, second tallest. Nasal with a round central nostril, supranasals and postnasals absent. Two loreals, each taller than wide, anterior loreal overlapping frontonasal and prefrontal, posterior loreal overlapping prefrontal, first supraciliary, preocular and anterior presubocular. Supraciliaries ten left, nine right, in largely linear contact with supraoculars, first extending medially to contact frontal, separating prefrontal and first supraocular; first three contacting first supraocular, penultimate large, oblique, extending medially to be overlapped by fourth supraocular, last supraciliary large, divided into upper (postsupraocular) and lower scale. Postsupraocular medially overlaps frontoparietal. Preocular single, separated from prefrontal by contact of posterior loreal with first supraciliary, and followed by one oblique scale wedged between anterior supraciliaries and upper palpebrals. Presuboculars five (left)/ four (right), first two above second supralabial, remainder interdigitating with supralabials two to five. Suboculars one. Postsuboculars four (left)/five (right), first interdigitating between supralabials five and six, uppermost overlapped by last supraciliary and overlapping parietal, upper secondary temporal and upper part of primary temporal. Upper postocular single, elongate, below penultimate supraciliary. Lower postocular divided into an anterior and posterior scale, both overlapped by upper postocular, and posterior postocular interdigitating with upper postocular and lower part of last supraciliary. Upper palpebrals in contact with supraciliaries 2–9 (L) and 2–8 (R). Lower eyelid scaly; lower palpebral row of small squared scales only slightly interdigitating with subpalpebrals. Supralabials seven, first rectangular, longer than second, second to fourth square, fifth below subocular, sixth and seventh more pentagonal. Postlabials two. Primary temporals two, lower overlapping upper, and wedged between last two supralabials. Secondary temporals two, upper elongate, bordering parietal, anteriorly separating upper primary temporal from parietal, and overlapping lower secondary temporal. Nuchals two left/one right, anterior pair separated from upper secondary temporals by one scale. Ear vertically ovoid, lacking lobules along anterior margin. Mental in broad contact with postmental. Infralabials five. Postmental wider than long, in contact with only first infralabial on each side. First pair of chin shields in broad median contact. Second pair of chin shields separated and overlapped by a single median scale. Third pair of chin shields divided into a medial and lateral scale, medially separated by three scales that overlap the more medial chin shield. Midbody scales 34; paravertebral scales barely broader than adjacent dorsal scales, 83 from first scale posterior to parietal to last scale anterior to level of anterior margin of hindlimbs; subdigital lamellae paired, with lamellae of preaxial series larger than postaxial series; subdigital lamellae below fourth toe unknown, as fourth toe incomplete on both limbs, but assuming a similar proportion of digit lengths to other members of the *S. solomonis* species group, an estimate of 11 lamellae below this digit.

Osteology: Presacral vertebrae 26. Postsacral vertebral series incomplete, but 30 to the point of regeneration. Phalangeal formula of manus 2.3.4.4.3; phalangeal formula of pes 2.3.4.?.4.

Differential diagnosis: From *S. schultzei* (Vogt, 1911a), the only other species in the *S. solomonis* species group lacking division of the last supralabial but with divided primary temporal scales, *S. wau* sp. nov. differs in lacking the characteristic fusion of first supralabial to nasal (Greer 1973, Greer & Parker 1974). *Sphenomorphus schultzei* is also a much smaller species, with maximum SVL only 50 mm, and very rarely more than 42.5 mm, and has fewer midbody scales (22–28), paravertebral scales (43–70), supralabials (six, with fourth below centre of eye), the lower secondary temporal overlapping the upper secondary temporal, and the third pair of chin shields not divided.

In the key to the *S. solomonis* species group provided by Greer & Shea (2004), *S. wau* sp. nov. would key to *S. nigriventris* (de Rooij, 1915) in having prefrontals in contact, supralabials seven with the fifth below the eye, three supraciliaries contacting the first supraocular, presuboculars

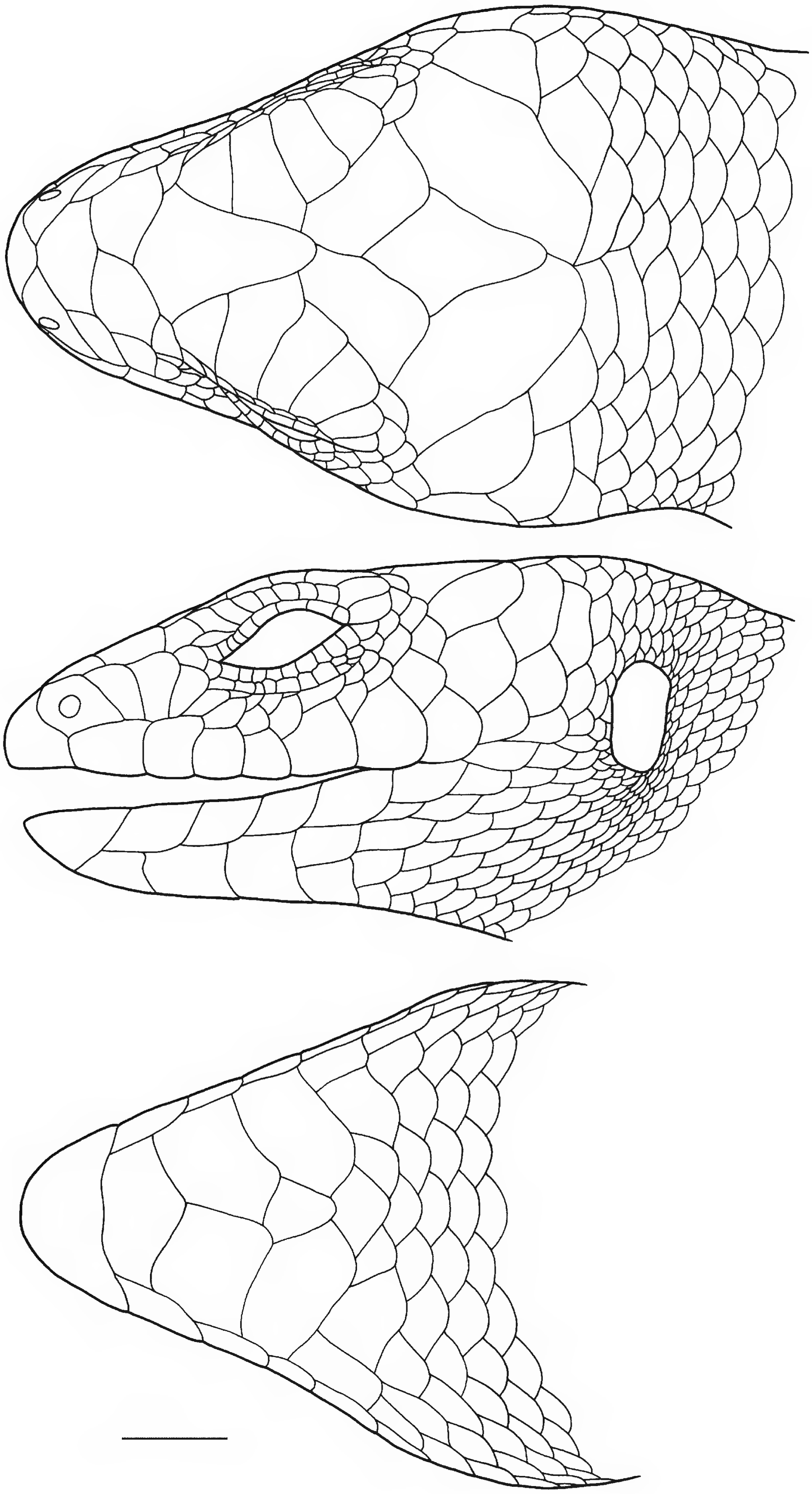

Figure 2. Head shields of *Sphenomorphus wau* sp. nov. [scale bar = 2 mm].

four (note that the definition of presuboculars used in that paper is different to the definition used here, so that our counts are one greater than used by Greer), and infralabials contacting the postmental one. *Sphenomorphus nigriventris* is a species complex, although the populations in Papua New Guinea represent a single taxon. These geographically nearest populations to *S. wau* sp. nov. (though still separated by 485 km) differ from it in having 28–32 midbody scales, last supralabial divided, lower secondary temporal overlapping the upper secondary temporal, and two suboculars. They also have a distinctive colour pattern of small white spots partially edged with dark brown, giving a series of partial-ocelli that are the major component of lateral and dorsal pattern.

Four other *Sphenomorphus* species are known from the Wau area: *S. darlingtoni* (Loveridge, 1945), *S. jobiensis* (Meyer, 1874), *S. neuhaussi* (Vogt, 1911b) and *S. solomonis* (Boulenger, 1887). Of these, only *S. darlingtoni* and *S. jobiensis* have been recorded from the type locality of *S. wau* sp. nov. The local population of *S. darlingtoni* differs from *S. wau* sp. nov. in a number of characters, including smaller maximum SVL (52 mm), fewer paravertebral scales (59–77), greater number of supraoculars (usually six, with the first three in contact with the frontal, occasionally the first two only in contact with the frontal, or seven, with the first three contacting the frontal) and supraciliaries (10–14, modally 12), anterior loreal either excluded from the supralabials by contact between nasal and posterior loreal, or double (divided into a dorsal and ventral scale), at least the last supralabial, and often the last two, divided into upper and lower scales, and the lower secondary temporal overlapping the upper.

Sphenomorphus jobiensis is a much larger species than *S. wau* sp. nov., with the minimum mature size for local populations being SVL = 76 mm for males and 79 mm for females. It also has many more midbody scales (36–44), subdigital lamellae (21–29), supralabials (8–10), and postsuboculars (usually 6–8, rarely 5), as well as having a double anterior loreal, the last two supralabials divided and the lower secondary temporal overlapping the upper secondary temporal, and the first two pairs of chin shields in median contact. It is not a member of the *S. solomonis* species group to which *S. wau* sp. nov. belongs, lacking the diagnostic postsupraocular scale of that species group.

Sphenomorphus neuhaussi is a member of the *S. pratti* group, and like other members of that complex is an elongate, short-limbed, small-headed semifossorial species with a very pointed snout. Its distinctive colour pattern of narrow dark grey stripes on a light grey to pink/tan ground colour is very different to that of *S. wau* sp. nov., and it is a much larger species (adult SVL of the local population 90 mm or more), with shorter forelimbs (13.3–17.1% of SVL) and head (14.2–17.4% of SVL), and greater number of midbody scales (36–38) and paravertebral scales (90–111). It further differs in lacking a postsupraocular, having prefrontal scales separated (at nearest approach, barely touching in a few individuals), anterior loreal long and low, only 2–3 presuboculars, the last supralabial divided, and the second and third chin shields separated from the infralabials by one (second chin shields) or two (third chin shields) rows of oblique scales.

Sphenomorphus solomonis, like *S. wau* sp. nov. a member of the *S. solomonis* group and possessing a postsupraocular scale, and of similar size to *S. wau* sp. nov. (local populations with adult SVL 53.5–71.5 mm), differs in having a more coarsely spotted lateral pattern, often with dark dorsal spotting, fewer midbody scales (26–30) and paravertebral scales (59–72), separated prefrontals, 2–6 nuchals on each side, more square loreals; 3 presuboculars, 2–4, usually 3, suboculars; usually single primary temporal but last supralabial divided, and usually two pairs of chin shields in median contact.

Distribution and habitat: Known only from a single site on Mt. Kaindi on the Bulolo Watut Divide at 1900 m (Figs 3–6). This site is along the old road to Edie Creek from Wau. Landslips (Fig. 7) have resulted in the old road to Edie Creek becoming inaccessible, and the new road to Edie Creek, constructed in the early 1970s, bypasses the site. On the 1:100 000 Papua New Guinea topographic map series (Sheet 8283 Wau, Series T601 Edition 1-AAS, 1977), the site begins at DM638891 and follows the old road along the side of the valley for about one kilometre. The area immediately along the road was mostly a mix of anthropogenous grassland with scattered patches of second growth (dominated by *Saurauia* sp.) and remnant mid-montane *Elaeocarpus* forest. The area is just above the *Castanopsis* zone (Gressitt & Nadkarni 1978). Annual rainfall, based on limited measurements from a nearby weather station, is around 2500 mm and the mean monthly temperature is around 16.5°C.

The only other similarly-sized *Sphenomorphus* known from the type locality is *S. darlingtoni*. It was common under logs, pieces of wood and other debris along the abandoned roadway and occurs in

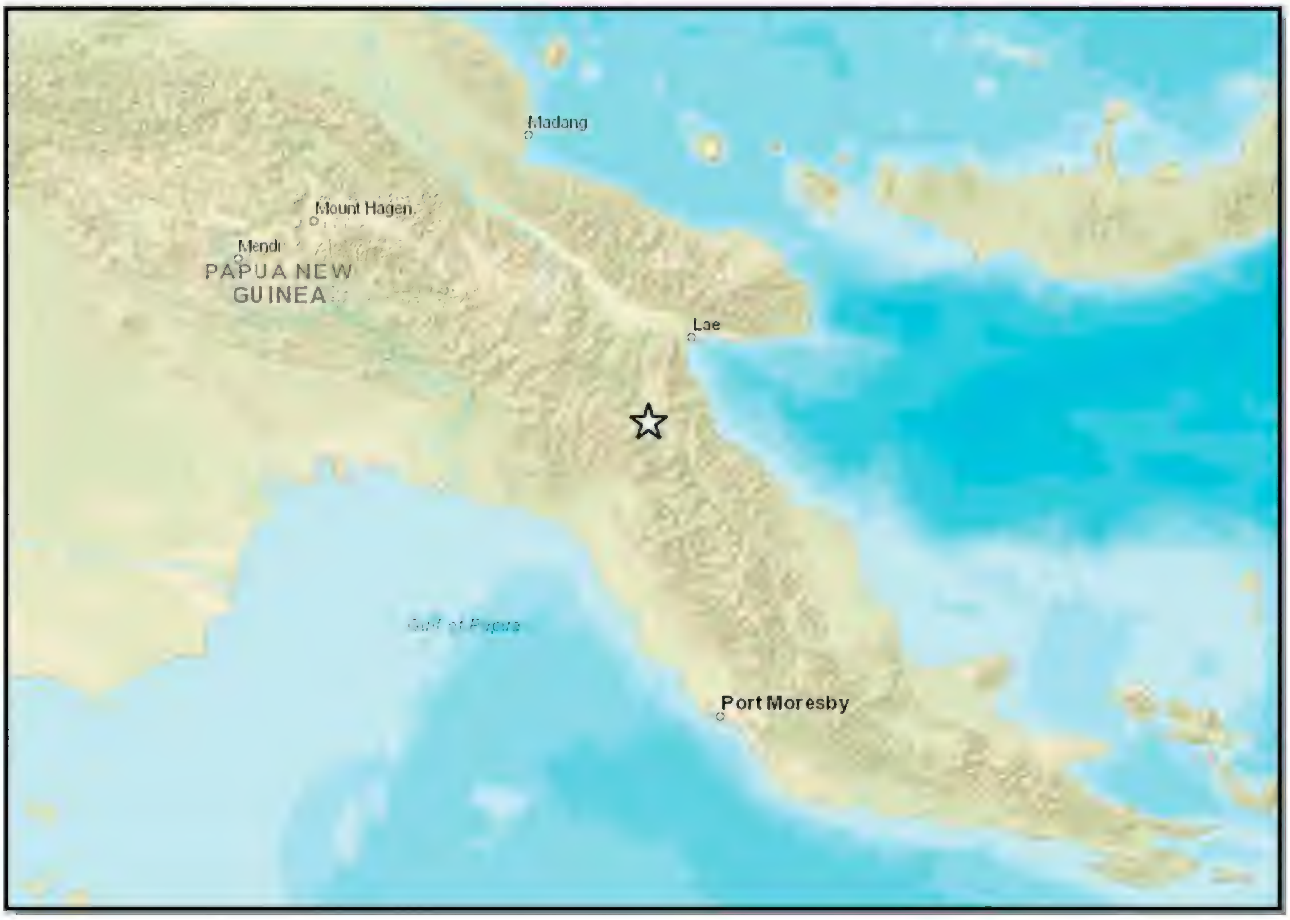

Figure 3. Distribution of *Sphenomorphus wau* sp. nov. (star).

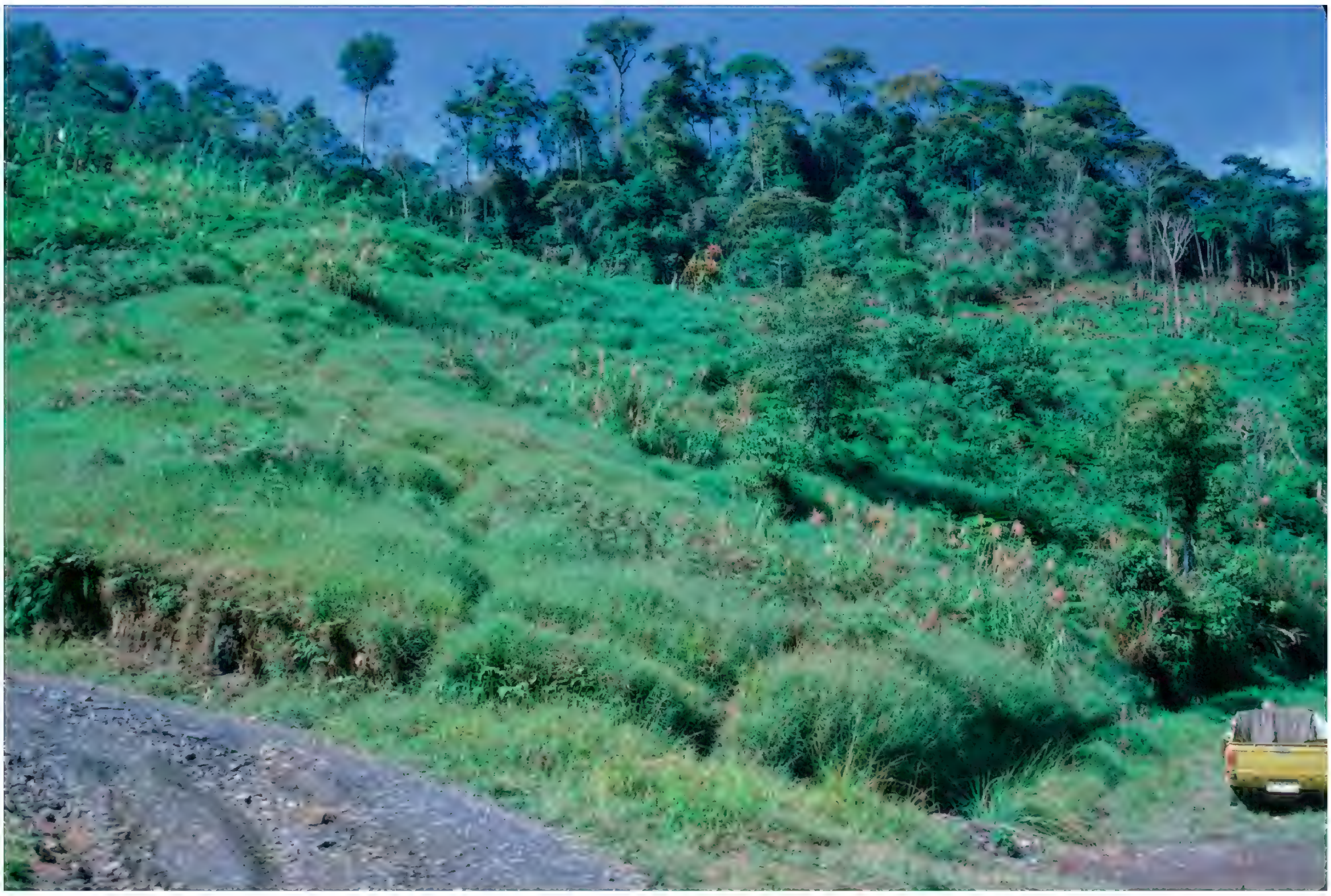

Figure 4. Habitat at eastern end of the general collecting site for *Sphenomorphus wau* sp. nov., looking west, at the junction of the old (to right) and new (to left) roads to Edie Creek. The site consists of both grasslands and forested areas and extends along the old road for about 1 km.

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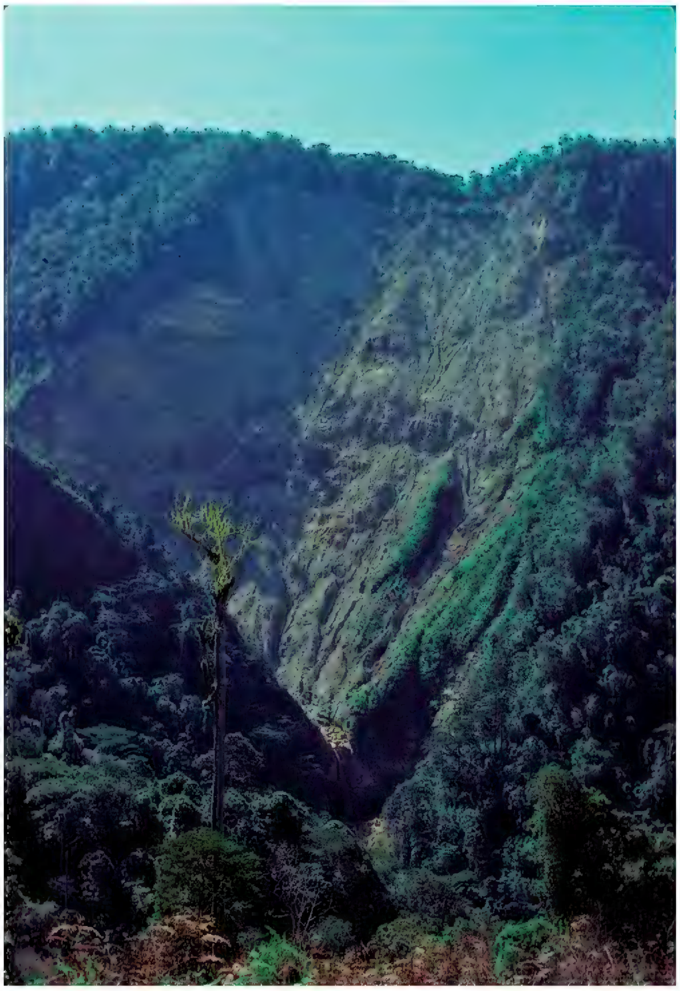
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Figures 5–7. *Sphenomorphus wau* sp. nov. habitat. 5 – Habitat slightly further along the old road to Edie Creek, showing forest typical of the area; 6 – Details of dense understory at forested area in the general site for *Sphenomorphus wau* sp. nov.; 7 – Landslip adjacent to the site for *Sphenomorphus wau* sp. nov.

the area from around 1100 m to nearly 2200 m in both primary and secondary forest.

Sphenomorphus wau sp. nov. appears to be a mid–montane species and is likely a primary forest inhabitant. The second author made extensive collections from 1200–1800 m along the Edie Creek Road and adjacent second growth forests and on the south summit of Mt. Kaindi at 2362 m but obtained only the holotype. Although he conducted relatively little field work in mid–montane primary forests on Mt. Kaindi, he collected fairly extensively in these forests on Mt. Missim, across the Wau Valley to the east. Mt. Missim shares many species of amphibians and reptiles with Mt. Kaindi but *Sphenomorphus wau* sp. nov. is either absent from there or exceedingly rare. The Bishop Museum holds 284 *Sphenomorphus* specimens from the vicinity of Wau, Mt. Kaindi and Mt. Missim collected between 1961 and 1988 from a number of altitudes and habitats, but only the single specimen of *S. wau* sp. nov. is among them. Until additional records are obtained, we are unable to determine whether the primary forest at the type locality is core habitat for the species, and it naturally occurs in low densities in that habitat, or whether the low densities reflect the type locality being on the periphery of the distribution for the species.

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Appendix 1. List of examined specimens.

Material studied:

Sphenomorphus darlingtoni (Loveridge, 1945)

n = 45) all from Morobe Province, Papua New Guinea:

BPBM 2887, 3853, Wau 1200 m, 7.343297°S 146.712862°E; BPBM 3967, Wau, 1100 m, 7.343297°S 146.712862°E; BPBM 2890, Mt. Missim, vic Wau, 7.218297°S 146.809899°E; BPBM 4141, Mt. Missim, vic Wau, 1650 m, 7.275815°S 146.779891°E; BPBM 6182, Mt. Kaindi, 2350 m, 7.355634°S 146.678053°E; BPBM 8356–60, 19074–79, 29792–93, 4.5 km WNW Wau, Mt. Kaindi, 1750 m, 7.330616°S 146.682971°E; BPBM 8741, 8950, 8958, 9018, 9243, 19073, 28568, 30172, 5 km WNW Wau, 1800 m, 7.337259°S 146.666090°E; BPBM 8935, Edie Creek, vic Wau, 2150 m, 7.365242°S 146.664411°E; BPBM 19081, 19092–93, 23673–74, 24059, 24062, Mt. Missim, 1290 m, 7.282609°S 146.769022°E; BPBM 19082–83, Mt. Missim, Camp 2, 1630 m, 7.274457°S 146.777174°E; BPBM 19084–85, Mt. Missim, Camp 2, 1640 m, 7.274457°S 146.777174°E; BPBM 19086–87, Mt. Missim, Camp 2, 1650 m, 7.274457°S 146.777174°E; BPBM 19088–89, Mt. Missim, Camp 2, 1670 m, 7.274457°S 146.777174°E; BPBM 19090, Mt. Missim, Camp 2, 1680 m, 7.274457°S 146.777174°E; BPBM 19091, Mt. Missim, Camp 2, 1700 m, 7.274457°S 146.777174°E; BPBM 30141, Mt. Missim, vic Wau, 1350 m, 7.282609°S 146.769022°E.

Sphenomorphus jobiensis (Meyer, 1874)

n = 108, all from Morobe Province, Papua New Guinea:

BPBM 8320, 8322, 8361, 8363, 10812, 14590, 14592–93, 14596–99, 14601–06, 14608–10, 14613–17, 14619–21, 14624, 19185, 19187–88, 19191, 19193–94, 21476–77, 24737–43, 24745–59, 32644, 2.5 km NW Wau (Wau Ecology Inst), 1230 m, 7.341486°S 146.705616°E; BPBM 14591, 14594–95, 14600, 14622–23, 3 km NW Wau, 1300 m, 7.324120°S 146.693650°E; BPBM 14612, 1.8 km W Wau (WEI House #1), 1360 m, 7.341466°S 146.705616°E; 19179, 5 km WNW Wau (Mt. Kaindi), 1800 m, 7.337259°S 146.666090°E; BPBM 19180–84, 24736, 32645–46, 1 km SW Wau, 1200 m, 7.349690°S 146.706460°E; 19189–90, Mt. Missim, vic Wau, ca. 1350 m, 7.282609°S 146.769022°E; BPBM 19192, along Bulolo–Wau rd, nr Kalli Bridge, ca. 4 km NNW Wau aerodrome, ca. 950 m, 7.309783°S 146.719203°E; BPBM 19195, Mt. Missim, 1470 m, 7.282609°S 146.769022°E; BPBM 19196–201, 2 km W Wau, 1150 m, 7.343300°S 146.694750°E; BPBM 19202, 21499, Wau Ecology Institute, 1200 m, 7.341486°S 146.705616°E; BPBM 20970, 20974, 20979, Mt. Missim, Lantana Creek, 1100–1160 m, 7.278776°S 146.749771°E; BPBM 20971, 20977, Mt. Missim, Lantana Creek, 1100–1130 m, 7.278776°S 146.749771°E; BPBM 20972, Mt. Missim, Misery Creek, 1040–1060 m, 7.279952°S 146.741261°E; BPBM 20973, Mt. Missim, Cold Water Creek, 1100–1150 m, 7.262681°S 146.743650°E; BPBM 20975, Mt. Missim, Lantana Creek, 1100–1150 m, 7.278776°S 146.749771°E; BPBM 20976, Mt. Missim, Misery Creek, 1025–1030 m, 7.279952°S 146.741261°E; BPBM 20978, Mt. Missim, Cold Water Creek, 1150–1195 m, 7.262681°S 146.743650°E; BPBM 20980, Mt. Missim, Misery Creek, 1040–1090 m, 7.279952°S 146.741261°E; BPBM 20981, Mt. Missim, Trap 32, 7.218297°S 146.809899°E; BPBM 21493–94, Wau, 1200 m, 7.343297°S 146.712862°E; BPBM 24721, Mt. Missim, Misery Creek, Trap 84, 1040–1060 m, 7.279952°S 146.741261°E; BPBM 24732, 1 km SW Wau, 1150 m, 7.349690°S

146.706460° E; BPBM 24733–35, 1 km SW Wau, 1250 m, 7.349690° S 146.706460° E.

Sphenomorphus neuhaussi (Vogt, 1911b)

n = 30, all from Morobe Province, Papua New Guinea:

BPBM 8319, 2.5 km NW Wau, 1340 m, 7.341486° S 146.705616° E; BPBM 14649–52, 14654, 14656–58, 19095, 23668, 24728–29, 25549, 2.5 km NW Wau (Wau Ecology Inst), 1230 m, 7.341486° S 146.705616° E; BPBM 14653, 14655, 1.8 km W Wau (Wau #1 house), 1360 m, 7.341486° S 146.705616° E; BPBM 18977–81, Wau, 1200 m, 7.343297°, 146.712862° E; BPBM 19094, 1 km SW Wau, 1200 m, 7.349690° S 146.706460° E; BPBM 19096–102, 2 km W Wau, 1150m, 7.343300° S 146.694750° E; BPBM 24727, 1 km SW Wau, 1300 m, 7.349690° S 146.706460° E.

Sphenomorphus nigriventris (de Rooij, 1915)

n = 200:

AMS R30731–32, R30747, AMNH 107235–37, MCZ R132568–83, PNGNM 24195–201, Imigabip, 4200 ft [1250 m], Western Province, PNG, 5.28° S 141.50° E; AMS R30755, R127837–66, MCZ R132584–86, Tifalmin [1530 m], Sandaun Province, PNG, 5.08° S 141.45° E; AMS R30758, AMNH 107230, 107233, MCZ R132587–608, PNGNM 24188–91, SAMA R11638, Wangbin, 4800 ft [1400 m], Western Province, PNG, 5.23° S 141.25° E; AMS R40788, AMNH 111742–43, MCZ R139276–82, R142471–74, R142487, PNGNM 22352A–B, USNM 204022, Gigabip, 5000 ft [1520 m], Western Province, PNG, 5.12° S 141.05° E; AMS R115515–16, R115518, Yapsiei, 200 m, Sandaun Province, PNG, 4.62° S 141.08° E; AMS R119542–43, Miptigin, Telefomin Mtns 1700–2300 m, Sandaun Province, PNG, 5.17° S 141.58° E; AMS R122866, R122879, Sol River, Telefomin area, 1460 m, Sandaun Province, PNG, 5.12° S 141.65° E; BPBM 34308, Kunida, Subutu River area, 1810 m, Southern Highlands Province, PNG, 5.650453° S 142.642773° E; BPBM 34309, Top House, 1910 m, Southern Highlands Province, PNG, 5.65915° S 142.63538° E; BPBM 34315–36, 34318, unnamed locality, 1855 m, Southern Highlands Province, PNG, 5.652061° S 142.643303° E; BPBM 34310–12, 34319–39, 34345–46, Semba, 1790 m, Southern Highlands Province, PNG, 5.633963° S 142.649765° E; BPBM 34313–14, 34340–44, Dickson's House, 1777 m, Southern Highlands Province, PNG, 5.64545° S 142.63904° E; PNGNM 22763, UPNG 4622, Tabubil, Western Province, PNG, 5.25° S 141.22° E; PNGNM 24183–87, 24192–94, Olsobip patrol post, Western Province, PNG, 5.38° S 141.50° E; RMNH. RENA 30018–22, SAMA R6240–41, R6232A–C, R6255–56, Busilmin, 1520 m, Sandaun Province, PNG, 4.92° S 141.13° E; SAMA R6249, R6261, Kawolabip, Western Province, PNG.

Sphenomorphus schultzei (Vogt, 1911a)

n = 133:

AMS R30763, AMNH 107226–27, 111744, 124041–43, MCZ R142339–40, PNGNM 24249–50, Wangbin, 4800 ft [1400 m], Western Province, PNG, 5.23° S 141.25° E; AMS R40786–87, AMNH 111733–35, MCZ R140675–80, R140682–95, PNGNM 22362A–B, USNM 204024–25, Gigabip, 5000 ft [1520 m], Western Province, PNG, 5.12° S 141.05° E; AMS R118816–17, Namosado, 900 m, Southern Highlands Province, PNG, 6.25° S 142.78° E; AMS R127836, AMNH 107229, MCZ 120137–40, PNGNM 24248, Tifalmin [1530 m], Sandaun Province, PNG, 5.08° S 141.45° E; AMNH 62375, 18 km [23 km] SW Bernhard Camp, Idenberg River, 2150 m, Central Mamberamo Regency, Indonesia, 3.52° S 139.08° E; AMNH 95594, Mt. Hunstein, 4000 ft [1200 m], East Sepik Province, PNG, 4.50° S 142.65° E; AMNH 107228, MCZ R124044, PNGNM 24247, Imigabip, 4200 ft [1250 m], Western Province, PNG, 5.28° S 141.50° E; BPBM 2494, 2501, 2504, 2506, 2508, 2510, 2520, 2524–25, 3190, 3193, 3206, 3210, 3212–13, 3221–23, 3225–26, 3231–32, 3750, Sibil Valley, Star Mountains, Pegunungan Bintang Regency, Indonesia, 4.89° S 140.64° E; MCZ R140696, Mt. Fubilan, 6000 ft [1850 m], Western Province, PNG, 5.20° S 141.13° E; MCZ R141632–34, Mt. Fubilan, 5000–6000 ft [1500–1850 m], Western Province, PNG, 5.23° S 141.12° E; PNGNM 23195, Telefomin [2050 m], Sanduan Province, PNG, 5.13° S 141.63° E; PNGNM 24246, Olsobip patrol post, Western Province, PNG, 5.38° S 141.50° E; RMNH.RENA 18198, Calap village, Bime Valley, 1890 m, Pegunungan Bintang Regency, Indonesia; RMNH.RENA 18199, Munggona, 1800 m, Eipomek Valley, Pegunungan Bintang Regency, Indonesia, 4.45° 140.02° E; RMNH.RENA 29843–49, 29853–54, 29858–73, Basiskamp [Base Camp], Sibil Valley, Pegunungan Bintang Regency, Indonesia, 1260 m, 4.90° S 140.62° E; RMNH. RENA 29850–51, Sibil, Pegunungan Bintang Regency, Indonesia, 4.90° S 140.62° E; RMNH. RENA 29855–57, Ok Bon, Bivak 39 [Camp 39], Pegunungan Bintang Regency, Indonesia, 1300 m, 4.88° S 140.8°; SAMA R11829, Gayah Lydnum, Taman, New Guinea; SAMA R12710, Kowol River [? Kauwol River, Western Province, PNG]; UPNG 8640–41, Mt. Robinson, Western Province, PNG, 5.23°S 141.18°E; UPNG 5684–86, Tabubil, Western Province, PNG, 5.25°S 141.22°E; ZMA 12078, Parana Valley, upper Swart Valley, between Peak Doorman and Peak Trikora, Lanny Jaya Regency, Indonesia, 3.92°S 138.50°E

***Sphenomorphus solomonis* (Boulenger, 1887)**
n = 99, all from Morobe Province, Papua New Guinea:
BPBM 2880, 3745, Wau, 1200 m, 7.343297°S 146.712862°E; BPBM 8858, Vickery Ck, 8 km N Wau, 1100 m, 7.281701°S 146.710666°E; BPBM 9076, 9078, 9147, 9149, 9205, 9221, 9227, 9267, 9288–89, 9331, 14659, 14661–62, 14665–74, 17399–415, 19128, 32639, 32641, 2.5 km NW Wau (Wau Ecology Inst), 1230 m, 7.341486°S 146.705616°E; BPBM 9326–27, 14112, 19130–69, 2 km W Wau, 1150 m, 7.343300°S 146.694750°E; BPBM 14660, 14663–64, 19129, 3 km W Wau, 1600 m, 7.343300°S 146.685690°E; BPBM 19125, 1 km SW Wau, 1400 m, 7.349690°S 146.706460°E; BPBM 19126, 1 km SW Wau, 1250 m, 7.349690°S 146.706460°E; BPBM 19127, 1 km SW Wau, 1200 m, 7.349690°S 146.706460°E; BPBM 19129, ca. 3 km NW Wau, ca. 1400 m, 7.342911°S 146.694448°E; BPBM 20969, Mt. Missim, Lantana Creek, 1100–1150 m, 7.278776°S 146.749771°E; BPBM 25367, 3.5 km NW Wau, Mt. Kaindi, ca. 1450 m, 7.342911°S 146.694448°E.